

# Communities of Design Practice in Electronic Government

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## ABSTRACT

As we move towards more online governmental services—electronic government or e-government—our information technology (IT) and human-computer interaction (HCI) designs must both broaden and deepen. In Georgia, we have fostered communities of design practice (CDPs) that focus on IT and HCI design at the statewide enterprise level through the Georgia Digital Academy (GDA). In this study, we utilized observational methods and a participatory analysis of the CDP formation in the GDA. Our findings and conclusions converge with the growing body of knowledge on HCI communities of practice [4, 5]. We report our results and recommendations on how CDPs might be utilized to build effective e-government.

## Keywords

collaboration, community, community of practice, design, electronic government

## INTRODUCTION

As we all move into the digital age, the state of Georgia is progressing toward e-government. Many challenges in design and funding arise because providing an adequate return on IT assets when directly used by citizens requires climbing to new planes of user interaction, including greater effectiveness, convenience, and usability for constituents. We cannot merely “webify” current agency applications. Furthermore, e-government is not merely a segment of e-commerce, since public norms and criteria differ from those of private firms.

The big question then emerges: “How does a governmental organization move from an agency (fractionalized) perspective to an enterprise (integrated) perspective?” To answer this question, the Georgia Technology Authority (GTA) created the GDA at Southern Polytechnic State University (SPSU). We modeled the GDA after similar academies in the state of Washington and in private industry, such as Oxford Industries and IBM. Along the way we made some discoveries, reported here, about creating CDPs for effective IT and HCI in e-government.

## METHOD OF APPROACH

In 2002, the GTA sponsored two GDA sessions at SPSU. Both ran for 10 weeks meeting one day per week and required a deliverable at the end of each day. The initial session from March through May was a pilot GDA covering document management, the GDADM [3]. The second academy ran from July through September and covered the design of Microsoft™ Active Directory (AD) for the state of Georgia—the GDAAD [1]. The GDAAD was designed to be mostly technical. Professionals from multiple state agencies (GDADM n=26, GDAAD n=40) attended the GDA sessions. The GDADM required agencies to send both a business and a technical professional; the GDAAD was comprised predominately of technical professionals. We used both observation and participant analysis. Through our notes and participants’ evaluations made at each GDA meeting, progress towards the enterprise view was tracked and reviewed to develop this report.

## RESULTS, FINDINGS, AND DISCUSSION

We found that four main factors led to success in forming CDPs with an enterprise-wide view: 1) CDPs must be *transforming—a learning organization*. 2) CDPs need rich opportunities for *communication and collaboration to foster lasting trust*. 3) The CDP participants need to aim towards *clear goals and achievable products*. 4) The CDP participants need to see that success is *much more about cultural change than acquiring technical skills*.

### CDPs must be Transforming, Learning Organizations

*CDPs must learn to be fully transformational.* Initially the GDADM pilot was training-intensive. This lasted three weeks and was re-directed by participant feedback. Actions involving peers (labs, collaboration, etc.) were highly rated; those involving traditional, instructor-led training were unmercifully drubbed. We quickly reconfigured the GDADM sessions from eighty-percent training and twenty-percent group work to one-hundred percent facilitated collaboration. The daily feedback allowed the group to flexibly learn and kept the GDA on its global task.

### Communication and Collaboration Foster Lasting Trust

All GDA participants repeatedly stated that communication and collaboration were the most important of the success factors. Initially, about one-third of the GDADM participants and none of the GDAAD knew each other. Over the 10 weeks, they found similar IT and process

problems and solutions, but only after some initial friction. Overcoming differences led to “moments of truth” that kindled an intense professional spirit and trust. One member captured the absolute need for community by stating, “The GDA has given us a great start in breaking down the divide between state agencies. The group sessions created a cooperative environment and level of communication rarely achieved in state government.” This trust-basis continues in active professional groups formed after both of the GDAs.

#### Setting Clear Goals That Aim for Achievable Products

As with every successful change, adopting e-government requires clear goals. As initial goals, the sponsor expected three deliverables: 1) a user group, 2) a list of commonly held best practices, and 3) solution designs. All GDA participants quickly identified that they worked within the perceptual “caves” of their own agencies, where they did not see and interact with other agencies. Taking initiative, they added goals to move beyond the fractionalized situation to an enterprise view; they also added deliverables, including reports with recommendations [1, 3], a project roadmap [3], and an Active Directory Technical Advisory Committee [1]. Starting from ambitious but achievable goals, both GDAs achieved even higher levels of group performance; more quality products; more cohesive and active CDPs; and an emergence from the “caves” to act, contribute, and serve at a statewide level.

#### More Culture Change than Knowledge/Skill Acquisition

Despite a perceived emphasis on technology, CDPs are more about culture change. Everyone involved in the GDAs quickly discovered that moving to effective e-government is more about changing group culture than individual knowledge or skill acquisition. This was borne out in both GDAs in the typical path of Form, Storm, Norm, and then Perform [2] as shown in Table 1.

Table 1: Culture change and group formation in the GDAs.

<u>Stage</u>	<u>Description</u>	<u>Weeks GDADM</u>	<u>Weeks GDAAD</u>
Form	Gather together; talk	1 - 2	T, 1 - 2
Storm	Work with friction, diversity, & conflict	3	3 - 4
Norm	Negotiate consensus	4 - 5	5 - 6
Perform	Utilize consensus	6 - 10	7 - 10

Attempting to accelerate group gelling to the Perform stage, we tried the following tactics in the GDAAD: 1) Restricting it to technical leaders. 2) Adding an initial week of AD training (T in Table 1). 3) Giving optional technical consulting sessions. 4) Drafting all AD policies and standards for review. 5) Requesting drafts of statewide AD procedures for interacting with the vendor after directory services are outsourced in 2003. Although we expected the majority of the GDAAD work to be technical, only about one-fifth of it was so, with the rest of the discussion and

product being of an organizational nature, which was similar to the split observed in the GDADM. Both GDAs were loaded with cultural change despite our “greasing the skids” for a more technical GDAAD.

#### CONCLUSIONS AND RECOMMENDATIONS

Our GDA experience clearly indicates that e-government will require both deepening and broadening our approach to IT/HCI design. To be effective, IT designers must adopt an enterprise-wide view and continually collaborate across agencies. Facing these global demands for many years, HCI professionals have been an effective minority on IT design teams by using the power of the HCI CDP [4].

Table 2 lists needed attitude changes in the IT professionals making a move to e-government. Since those who now possess such a mindset are in the minority, we conclude that their situation parallels that of HCI professionals as described by Muller & Carey [4]. Because their natural sphere of influence is the total enterprise, cross-agency CDPs enable an effective broadening of both IT and HCI design for good e-government. Therefore, we recommend that: 1) CDPs be supported to accelerate transition to quality e-government and 2) the HCI community is a primary model for successfully molding global-IT CDPs.

Table 2: Main attitude changes needed in IT professionals

<u>Past</u>	<u>Future</u>
Agency view	Add enterprise-wide view
Civil-service allegiance	Add IT-professional allegiance
Employee users	Add citizen users
Position as power	Service level & quality as power

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